

IOWA HIGHWAY RESEARCH BOARD

Minutes of April 27, 2001

Regular Board Members Present

J. Adam	K. Mahoney
J. George	T. Myers
L. Greimann	D. Osipowicz
D. Julius	J. Selmer
B. Keierleber	W. Weiss
R. Krauel	J. Witt

Alternate Board Members Present

R. Gould for S. Larson	C. Van Buskirk
W. Nixon for J. Odgaard	J. Weber
L. Brehm	L. Wilkinson
J. Ites	R. Younie

Board Members With No Representation

None

Secretary

M. Dunn

Visitors

Bob Given	<i>Iowa Concrete Paving Association</i>
Saleem Baig	<i>Iowa Department of Transportation</i>
Sara Buseman	<i>Iowa Department of Transportation</i>
Ed Engle	<i>Iowa Department of Transportation</i>
Ian MacGillivray	<i>Iowa Department of Transportation</i>
Wally Rippie	<i>Iowa Department of Transportation</i>
Bob Steffes	<i>Iowa Department of Transportation</i>
Jim Bolluyt	<i>Iowa State University</i>
J. (Hans) van Leeuwen	<i>Iowa State University</i>
Bob Lohnes	<i>Iowa State University</i>
Tom McDonald	<i>Iowa State University, CTRE</i>
Duane Smith	<i>Iowa State University, CTRE</i>

The meeting was held in the Large Materials Conference Room at the Iowa Department of Transportation, Ames, Iowa. The meeting was called to order at 9:00 A.M. by J. Adam.

Agenda Review/Modification

- Ian MacGillivray will be addressing the issue of board membership after item number 6.

Approval of the Minutes

- Tom Myers moved to accept the minutes from the March 30, 2001 meeting with no additions or corrections. Dennis Osipowicz seconded. Carried, with 14 yes, 0 no, and 0 abstaining.

Final Report, TR-430, “Regional Approach to Landslide Interpretation and Repair”

- Dr. Lohnes, Iowa State University, presented the objectives; scope of the problem; information on landslide interpretation, especially field evidence of problems; review of data base and semi-quantitative tool for a preliminary assessment of soil stability; slope repair methods; and conclusions and recommendations of the study.
- Clarification was made as to wick drains and plastic pins. A wick drain includes putting reinforced fabric on a rod and driving it into the soil, then pulling the rod out and the fabric stays in place for stabilization. The plastic pins are like miniature tiles, made of recycled plastic, they can be 6 feet long, and are driven into the ground.
- Jim Cable will be getting video tapes, reviewing this information, to Mark Dunn.
- Jim George moved to accept the final report. Tom Myers seconded. It was approved by the board with 13 yes, 0 no and 0 abstaining.

Final Report, TR-437, “Performance of Strip Seals in Iowa Bridges, Pilot Study”

- Dr. Bolluyt, Iowa State University, presented the main objectives, overview, scope, and recommendations of the report, including information that is available on the performance of strip seals, possible causes of failure, and possible solutions.
- Roger Gould - You mentioned a skew angle being a factor in some of the failure, could you explain that further?
- Dr. Jim Bolluyt - If you have a four inch seal and you have a large skew angle, because of the racking action that takes place in the expansion and contraction motions, you don't actually get a 4 inch rating out of that 4 inch seal, you might get something more like 2 ½ inch. So we suspect that the gap was not larger than the size of the seal, but it was larger than the rating of the seal. It's part of the Iowa specs to use those recommendations from the Michigan DOT. What it really says is that when you have a large skew, you can't get the nominal size of the seal

out of the seal, you get something less than that.

- John Adam - You mentioned some problems with construction/installation, could you be more specific with where the problems were with that?
- Dr. Jim Bolluyt - The problem that showed up most often, is where they cut the seal off vertically at the end. On the I-65 bypass in Des Moines (a picture was shown), the seal is cut off almost vertically. According to the Iowa DOT design plans, it is supposed to get cut off in a fairly intricate shape, so that the top of the seal stays above any water that's flowing in the gutter. We did leak tests, and even with the water level the way it was, water was dripping off the edge of that seal. That was true of all the seals on this particular bridge. Many of the seals were leaking on other bridges also, and the question is, why are they leaking so soon after installation. So that's why we think that a leak test may be a good idea.
- Randall Krauel moved to accept the final report. Wade Weiss seconded. It was approved by the board with 13 yes, 0 no and 0 abstaining.

Final Report, TR-441, "Development of a Traffic Control Devices and Pavement Markings Manual for Iowa's Cities and Counties with a Survey of Common Practices"

- Tom McDonald from CTRE presented the background, tasks and final report of the study, and discussed the manual distribution and final activities. Tom mentioned that a no-cost time extension to July 31, 2001 may be needed to finish up the distribution phase of the project. 450 copies of the manual were printed, 100 CD's were made, and it will be available on the CTRE web site. He gave options on distribution and asked for the board's input depending on the size of city they desired to receive the manual. If the group of cities included populations of 1000 +, there would be a need to distribute 443 total manuals to all the mentioned groups.
- Brian Keierleber - On your weight restrictions, it doesn't list the all vehicle sign below that yet. Something that was required in the last couple of years to be able to enforce that for grain wagons and such, we have to have the additional sign below that for all vehicles.
- Tom McDonald - The information that I have in there is what I thought was the latest that was available. If there is something that has happened since we put that together, maybe we need to take a look at that.
- Brian Keierleber - It is something that occurred in the last year or so. In order to enforce your signing on weight restrictions on your agricultural vehicles, you have to have an additional sign on there. This is in G10.1
- Tom McDonald - We may have to take another look at some of these individual sections. One feature of the way we designed this manual and what we anticipated, is when things like this do happen, whether it's something we may have overlooked or something that happened subsequent to the publishing of the manual, it's a relatively simple thing to update it. All we have to do is replace the pages where we need to make additional comments. So if there is something on here that is an omission or an oversight, we can certainly take care of that as well.

I'll look into that, thank you Brian.

- Brian Keierleber - Also, in particular, in the smaller cities, they cannot follow the manual, no matter what it says. I know just 2 nights ago on a Cedar Rapids tv station, they showed where they were placing stop signs in private driveways in an effort to control the speed in a residential section. I've had numerous discussions in depth with some municipalities regarding the use of stop signs that way. Do you know if those have changed in the later MUTCD manual?
- Tom McDonald - They recommend that we don't use stop signs for speed control. That is a commonly held position. It may not always be followed in the smaller cities.
- Brian Keierleber - In one case, the city's attorney told me that they don't have to follow the MUTCD.
- Tom McDonald - It's part of the law and is adopted into the Code of Iowa.
- Tom Myers - The cost that you had at \$19,000, did you stay within that guideline for the additional copies?
- Tom McDonald - Yes, that was what our estimate was for the 450 printed copies and 100 CD's. Anything beyond that, if we need reprint now, that would be an additional cost. We would probably not come back to the board with that unless there were some local agencies in Iowa that wanted a substantial amount more. If we do have some requests and interest from out of state, we would probably look at charging those people for additional copies that we had to go back and print to recoup those costs.
- Tom Myers - But for now, you have a sufficient supply for that 443, correct?
- Tom McDonald - Yes, 443, if we go down to the 1000 + population for the cities. We would have enough to supply a hard copy to everyone. Whatever the board wishes in that regard, we could go down to 1000 or 2000. I think the smaller communities do have a need for a document like this because of the lack of the availability of professional staff in that type of population.
- Tom Myers - With what Brian brought up, the issue of the overloading for age related signing, is CTRE going to pick up that cost?
- Tom McDonald - We're going to go about a year and do a post-distribution survey to find out what everyone thinks about the manual, what uses they are making of it, and any changes that need to be made at that time. Then we can make a decision as to what any editing or revision costs are going to be. If it is substantial, if there are enough changes in it that it would merit some additional funding, then we would have to bring it back to the board at that time. Anything interim to that then, through CTRE or the DOT, we would have to pick up those costs. But as of right now, we are hoping the manual is up to date, it was revised in accord to

what the new millennium MUTCD has in it. So you're probably going to see a few things in there that aren't exactly the way the present manual has them because we're anticipating that the new manual will be adopted by the DOT within the next few of months and we didn't want to have the whole guide manual out of date. So the revisions were included already.

- John Adam - Does the board want to make a recommendation to CTRE on the city size or let CTRE form their own direction on that?
- Randall Krauel - It is my opinion that this is a good product and that it is needed in those cities that size. Like was said, they don't have the professional staff and that's where, overall personally, I probably see most of the violations in the MUTCD postings. I'd suggest we'd distribute it down to 1000.
- Tom McDonald - Yes, we could certainly do that. It would be another 168 copies from the city size of 5000+. Another advantage of that, would be with the introductory letter. It also gives an idea of other folks they can contact. You'd hope they'd be in contact with the local systems engineer in their district, but a lot of people don't know who to call if they do have a question. This manual does give names of people to call.
- Tom Myers - Mr. Chairman, do you want to break this into two issues, acceptance of the final report and then the recommendation of the board on city size for distribution?
- John Adam - I don't know that we have to separate those. If there are no objections, I would be comfortable with accepting the report and just making recommendations to Tom as to the distribution issue. If there are other opinions, perhaps we can discuss it further.
- Jim George - Not to be greedy on distribution, but I suspect that the counties have paid for this more than anybody else (funding percentage was 50% Secondary), and I'm a little concerned that most counties will want more than one manual. We'd want one for our field guy and one for our office guy.
- Tom Myers - Tom (McDonald), do the publishers have a minimum on what can be ordered for extra copies?
- Tom McDonald - No, we can order any number, it's just more expensive per unit the fewer we order.
- Wilfrid Nixon - In regard to copies, CD's are very inexpensive, nearly \$3.00 to burn a CD once it is set up and ready to go. Would it be acceptable to send a second copy to the counties in the form of a CD? Then get the printed copies out to the smaller cities.
- Dennis Osipowicz - That would work for the counties.
- Tom McDonald - That would be an option we could do, if you want to go down to 1000+

population with the hard copies and then we could provide any additional in the CD. You can reproduce the CD's the relatively cheaply like you say. If we do have enough interest in hard copies after that, we could come back for supplemental visit with you again. As of right now, I think that would be a good plan to follow. We very well may need to do a re-editing and things another year from now anyway, just depending on how many changes that we find. Certainly anything in addition to what Brian brought up, if you see anything else in there that looks like an oversight, be sure to let me know and we'll try to make any adjustments that we can before we mail out, or at least we'll make notice to everybody in the introductory letter that there might be something in there that they need to be aware of. Anything in addition to that, we would appreciate as well.

- John Adam - To wrap this up, let me summarize this, we would recommend that you distribute the hard copies down to cities of 1000+, counties would get one hard copy and a second copy in CD form, and then you'll come back in a year if you have greater need. Is everybody comfortable with that?
- Tom Myers made a motion to approve the report and the manual with the above terminology. Wade Weiss seconded. It was approved by the board with 14 yes, 0 no and 0 abstaining.

Problem Statement, "Re-Use of Lime Sludges from Water Softening"

- Dr. J. (Hans) van Leeuwen presented his problem statement to the board on possible areas to research which could benefit from the re-use of lime sludge from water treatment plants.
- Tom Myers - Are you concerned with the ph's and vegetation with the environmental impact?
- Dr. J. (Hans) van Leeuwen - The solubility of the calcium carbonate is extremely limited, so the effect it will have on anything in the environment would be relatively limited. The lime sludge itself has a ph of about 12, but once mixed with soil the run off would be minimal. So in terms of any effects there, it is quite small. As a matter of fact, one other possible use for this (this is already being done to some extent), is using this lime sludge in agriculture to substitute for limestone used as agricultural lime. So there, it is actually beneficial. It's just a matter of quantity. I do not have any doubts that it would not have a negative effect on roadside vegetation, not anymore than cement or any other lime product presently used would have, probably less.
- John Adam - In its dehydrated state, what type of material is this? Does it become a granular material or a hard material that need to be crushed or broken?
- Dr. J. (Hans) van Leeuwen - It's relatively soft. It's a bit like wet gypsum consistency. The dryer it gets, the harder it gets. In terms of how we stockpile it, it's relatively soft; you could spread it, work it in with a grader, or crush it.
- Dennis Osipowicz - It seems like you're asking for 40% of the funding from us, but I don't see that 40% of the value will come to highway research.

- Dr. J. (Hans) van Leeuwen - We actually envision to proportion the research time and effort more or less in that split. It shouldn't be forgotten that the \$40,000 in contribution that we already have was primarily aimed not towards transportation research, but for all the other purposes. The transportation applications were added on later. But we certainly wanted to do about 40% of the research in the transportation area.
- John Adam - Are there any more comments or questions? (None) Then at this point, we need to vote on whether we should have Dr. van Leeuwen bring back a proposal.
- The board discussed how this fell into the current business plan. This was not on our list of prioritized research topics. Dr. van Leeuwen contacted the DOT to see if there was any interest in this. It came to the board under the category of having matching funds currently available and having an opportunity to participate in it, if the board so chooses. The board had previously discussed being willing to entertain issues that come up with matching funds, even if they aren't on our list.
- Jim George - That was my understanding, that we had some flexibility in projects like this that might come up. I agree with Denny's comment that it may have limited use on roads, but I think it does have some and it seems to me it's at a bargain price. The professor has gotten support from 3 cities and the university and may be asking us for a minimal contribution. It looks like a good project.
- The contribution from each of the 3 funds is decided after a proposal is reviewed and if it is accepted.
- Tom Myers made a motion to have a proposal brought back to the board. Jim George seconded. It was approved by the board with 14 yes, 0 no and 0 abstaining.

Review of changes regarding the number of board members

- Ian MacGillivray reviewed the results from the discussions since the last meeting on the issue of the board make up.
- Ian MacGillivray - Tom Stoner, on behalf of the County Engineer's Association, and I visited with Tom Cackler. We conveyed the recommendation both of the board and what the objectives of the Association were in support of research and bringing more support from research to the practice. As a results, the decision about membership has been revised. I think a copy of Tom's letter to the chairman is at your place. As for a very quick summary, we have contacted the TRB representative of the County Engineer's Association, Mark Nahra, and advised him of this and invited him to join. He'll begin attending with the next meeting. I've also discussed with him some additional activity, both to support him in his role for the Association, and what we think, at more of a staff oriented level, what he can do to contribute to support the board as well. I think this will work out to be a very beneficial relationship.
- John Adam - We will have to take another look at the business plan. We were holding off on

that pending the outcome of these discussions.

- Ian MacGillivray - At the next meeting, we'll have the revised PPM to go along with the business plan and I think you can take final action on that at that time.
- Wade Weiss - I'd like to thank Ian. After the last meeting, he did get the ball rolling and got Mr. Cackler and Tom Stoner together immediately and it all worked out for the best I think for the county engineers' side.
- Ian MacGillivray - One aspect I need to report was that I was greatly assisted by Kevin Mahoney in the process as well. He did participate in that and he did support the recommendation.
- Dennis Osipowicz - I have a procedural question. What authority does the DOT have as far as the make up of this? I realize you have Policy and Procedure Memorandum on that, but is there some rule or law that says the DOT can come up with that?
- Ian MacGillivray - Yes, it's real straight forward. There are 2 provisions in the code that earmark money for this. The city/street research fund and the set aside from the secondary road for research and the code calls on the department to manage and conduct that program in consultation with both coalitions. That's basically all it says. It's not much to look at. In fact, I may have used a couple words aren't in it. It's that short. The historic process then, that has been one of collaboration through this type of process instead of putting a DOT program together and ask if you agree or disagree with asking for recommendations on a program like on an annual basis or something like the planners do. Dennis, Is that good enough or do you want something else?
- Dennis Osipowicz - I'll just try to look it up in the code.
- Mark Dunn - I'll send a copy of all the provisions to everybody on the board.
- Ian MacGillivray - That's why it's been a rather informal process.

New Business

- Mark Dunn handed out a map with directions to the Ames Drivers License Station Conference Room. The DOT is going to be remodeling the first floor of the Administration Building starting later this summer. In turn, the video conference equipment will be moved to the west end of the Large Materials Conference Room. Video conferencing will have priority over anything previously scheduled in the room and we could lose the room as late as a day before a board meeting. Due to the uncertainty, the Driver's License Station Conference Room has been scheduled as a back up. E-mails will be sent out notifying members and alternates when and if a meeting needs moved to the back up location. We will also put a note on the door of the Large Materials Conference Room to notify others who may be attending as visitors. As of now, we know that the September 28 and the October 26 meetings have been affected by video

conferencing. Currently, we are planning on having those meetings at the Ames Drivers License Station Conference Room.

- Mark Dunn will look into the option of the board using ICN facilities hold a meeting.
- At the next meeting, the board will discuss a location for the June 29 meeting.

Competitive Proposal Review Process

- Mark Dunn reviewed a document designed to help with reviewing both individual and competing proposals. Members and alternates should review this individually and recommended changes can be proposed at the next meeting. Ideas may come easier as the board starts putting this in practice and changes can be made as we go. The purpose of the document is to allow each member or alternate to review different aspects of the proposal(s) to see if it would be a quality proposal, matching the request, worth funding for research. With competing proposals, it would help determine which proposal would be the better one, or if each would prove beneficial. The documents would be a review sheet for personal use only and not tallied, averaged or collected.

Research topic prioritization

- Mark Dunn reviewed the initial ranking results from the 14 ballots collected. Using the overall ranking results, each member or alternate voted on which topics they wanted to be have included in the final grouping. Each had 15 votes to cast, with no more than four votes going toward any one topic. Mark will summarize the results of these votes and get a list together of the top 20-25 priority topics. At the next meeting, background information and expanded descriptions will be reviewed by the board.

John Adam adjourned the meeting.

Date of Next Meeting

THE NEXT MEETING WILL BE HELD JUNE 1, 2001 (the May meeting is adjusted to avoid having it the Friday before Memorial Day) AT 9:00 A.M. IN THE LARGE MATERIALS CONFERENCE ROOM AT THE IOWA DOT.

Mark Dunn, Secretary